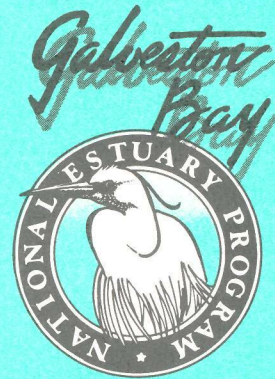


Toxic Contaminant
Characterization of Aquatic
Organisms in Galveston Bay:
A Pilot Study



Galveston Bay
National Estuary Program

GBNEP-20
June 1992

Toxic Contaminant Characterization of Aquatic Organisms in Galveston Bay: A Pilot Study



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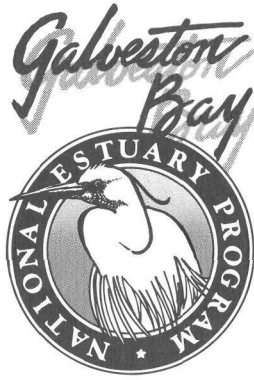
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GBNEP FINAL REPORT

TABLE OF CONTENTS

1.0	EXECUTIVE SUMMARY	1
2.0	INTRODUCTION AND BACKGROUND.....	5
2.1	Overview	5
2.2	Literature Review.....	8
2.2.1	Polynuclear Aromatic Hydrocarbons (PAHs).....	8
2.2.1.1	Organisms.....	9
2.2.1.2	Sediments and Water	10
2.2.2	Chlorinated Hydrocarbons.....	11
2.2.2.1	Organisms.....	11
2.2.2.2	Sediments and Water	13
2.2.3	NOAA's National Status and Trends "Mussel Watch" Program	13
2.2.4	Chlorinated Dibenzo-p-dioxin and Dibenzofurans.....	14
2.2.5	Trace Metals.....	15
2.2.5.1	Organisms.....	16
3.0	SAMPLING AND ANALYTICAL PROCEDURES.....	31
3.1	Field Sampling.....	31
3.2	Analytical Procedures.....	33
4.0	TRACE ORGANIC CONTAMINANT CONCENTRATIONS.....	39
4.1	Polycyclic Aromatic Hydrocarbons	39
4.2	Pesticides and PCB	40
4.3	Overview	41
5.0	TRACE METAL CONCENTRATIONS	65
6.0	HEALTH RISK ASSESSMENT.....	93
6.1	Introduction	93
6.1.1	Summary of Risk Assessment Process for Galveston Bay Seafood.....	93

6.2	Risk Determination	94
6.2.1	Hazardous Assessment and Selection of Chemicals of Concern.....	94
6.2.2	Dose-Response Assessment.....	95
6.2.3	Exposure Assessment.....	96
6.2.4	Risk Assessment.....	99
6.3	Comparison with Other Risks.....	101
7.0	LITERATURE CITED.....	115
APPENDIX A	TRACE ORGANIC ANALYTICAL RESULTS.....	121
APPENDIX B	TRACE METAL ANALYTICAL RESULTS.....	255
APPENDIX C	STANDARD OPERATING PROCEDURES.....	267

LIST OF TABLES

Table	Description	Page
2.1	GBNEP Sampling Summary	19
2.2	Hydrocarbon concentrations in samples from the Galveston Bay area	20
2.3	Chlorinated hydrocarbon concentrations in samples from the Galveston Bay area	21
2.4	Selected organic contaminant concentrations in oyster samples from NOAA's S & T Program sites in the Galveston Bay area	23
2.5	Selected organic contaminant concentrations in oyster samples from NOAA's S & T Program locations on the Gulf of Mexico coast	24
2.6	Summary Statistics for trace metals in Galveston Bay and U.S. Gulf of Mexico oysters collected 1986-1990 and 1976-1978	25
3.1	Target Species and Alternates	35
3.2	Target Species and Alternates legal sport-fishing size limitations	35
3.3	Fish Specimens caught for GBNEP during the summer of 1990	36
4.1	Summary of GBNEP PAH, Pesticide, and PCB Concentrations (dry weight)	43
5.1	Galveston Bay National Estuaries Program average 1991 trace metal data	68
5.2	Summary of trace metal concentrations (dry weight)	69
6.1	Categories of candidate chemicals or compound groups based on preliminary risk estimates	103
6.2	Dose-response for chemicals detected in Galveston Bay fish, crabs, and oysters	104
6.3	Estimated average and high (95th percentile) consumption rates for fish, crabs, and oysters used in risk assessment calculations	105
6.4	Non-carcinogenic risk index values for Galveston Bay Seafood from four different areas of the bay (average consumption)	106

6.5	Carcinogenic risk values for Galveston Bay seafood from four different areas of the bay (average consumption)	106
6.6	Non-carcinogenic risk index values for Galveston Bay seafood from four different areas of the bay (high consumption)	107
6.7	Carcinogenic risk values for Galveston Bay seafood from four different areas of the bay (high consumption)	107
6.8	Risk characterization for the chemicals of concern measured in this study at Hanna Reef in Galveston Bay	108
6.9	Risk characterization fro the chemicals of concern measured in this study at Morgans Point in Galveston Bay	109
6.10	Risk characterization for the chemicals of concern measured in this study at Eagle Point in Galveston Bay	110
6.11	Risk characterization for the chemicals of concern measured in this study at Carancahua Reef in Galveston Bay	111

LIST OF FIGURES

Figure	Description	Page
2.1	Collection sites for GBNEP samples	26
2.2	Metals concentrations in Houston Ship Channel water, 1974-1986	27
2.3	Surface sediment metals concentrations in the Houston Ship Channel, 1974-1986	28
2.4	Surface sediment metals concentrations in Galveston Bay, 1974-1986	29
4.1	Total PAH concentrations (ppb) in oysters, crabs, fish tissue, and fish livers from Morgans Point and Eagle Point	47
4.2	Total PAH concentrations (ppb) in oysters, crabs, fish tissue, and fish livers from Hanna Reef and Carancahua Reef	48
4.3	Total alkylated PAH concentrations (ppb) in oysters, crabs, fish tissue, and fish livers from Morgans Point and Eagle Point	49
4.4	Total alkylated PAH concentrations (ppb) in oysters, crabs, fish tissues, and fish livers from Hanna Reef and Carancahua Reef	50
4.5	Percentage of High Molecular Weight (HMW) PAH in oysters, crabs, fish tissues, and fish livers from Morgans Point and Eagle Point	51
4.6	Percentage of HMW PAH in oysters, crabs, fish tissue, and fish livers from Hanna Reef and Carancahua Reef	52
4.7	Percentage of Low Molecular Weight (LMW) PAH in oysters, crabs, fish tissue, and fish livers from Morgans Point and Eagle Point	53
4.8	Percentage of LMW PAH in oysters, crabs, fish tissue, and fish livers from Hanna Reef and Carancahua Reef	54
4.9	Total BHC concentrations (ppb) in oysters, crabs, fish tissue, and fish livers from Morgans Point and Eagle Point	55
4.10	Total BHC concentrations (ppb) in oysters, crabs, fish tissue, and fish livers from Hanna Reef and Carancahua Reef.	56
4.11	Total Chlordane concentrations (ppb) in oysters, crabs, fish tissue, and fish livers from Morgans Point and Eagle Point	57

4.12	Total Chlordane concentrations (ppb) in oysters, crabs, fish tissue, and fish livers from Hanna Reef and Carancahua Reef	58
4.13	Total DDT concentrations (ppb) in oysters, crabs, fish tissue, and fish livers from Morgans Point and Eagle Point	59
4.14	Total DDT concentrations (ppb) in oysters, crabs, fish tissue, and fish livers from Hanna Reef and Carancahua Reef	60
4.15	Dieldrin concentrations (ppb) in oysters, crabs, fish tissue, and fish livers from Morgans Point and Eagle Point	61
4.16	Dieldrin concentrations (ppb) in oysters, crabs, fish tissue, and fish livers from Hanna Reef and Carancahua Reef	62
4.17	Total PCB concentrations (ppb) in oysters, crabs, fish tissue, and fish livers from Morgans Point and Eagle Point	63
4.18	Total PCB concentrations (ppb) in oysters, crabs, fish tissue, and fish livers from Hanna Reef and Carancahua Reef	64
5.1	Silver concentrations (ppb) in oysters, crabs, fish tissue, and fish livers from Morgans Point and Eagle Point	73
5.2	Silver concentrations (ppm) in oysters, crabs, fish tissue, and fish livers from Hanna Reef and Carancahua Reef	74
5.3	Arsenic concentrations (ppm) i oysters, crabs, fish tissue, and fish livers from Morgans Point and Eagle Point	75
5.4	Arsenic concentrations (ppm) i oysters, crabs, fish tissue, and fish livers from Hanna Reef and Carancahua Reef	76
5.5	Cadmium concentrations (ppm) i oysters, crabs, fish tissue, and fish livers from Morgans Point and Eagle Point	77
5.6	Cadmium concentrations (ppm) i oysters, crabs, fish tissue, and fish livers from Hanna Reef and Carancahua Reef	78
5.7	Chromium concentrations (ppm) i oysters, crabs, fish tissue, and fish livers from Morgans Point and Eagle Point	79
5.8	Chromium concentrations (ppm) i oysters, crabs, fish tissue, and fish livers from Hanna Reef and Carancahua Reef	80
5.9	Copper concentrations (ppm) i oysters, crabs, fish tissue, and fish livers from Morgans Point and Eagle Point	81

5.10	Copper concentrations (ppm) i oysters, crabs, fish tissue, and fish livers from Hanna Reef and Carancahua Reef	82
5.11	Mercury concentrations (ppm) i oysters, crabs, fish tissue, and fish livers from Morgans Point and Eagle Point	83
5.12	Mercury concentrations (ppm) i oysters, crabs, fish tissue, and fish livers from Hanna Reef and Carancahua Reef	84
5.13	Nickel concentrations (ppm) i oysters, crabs, fish tissue, and fish livers from Morgans Point and Eagle Point	85
5.14	Nickel concentrations (ppm) i oysters, crabs, fish tissue, and fish livers from Hanna Reef and Carancahua Reef	86
5.15	Lead concentrations (ppm) i oysters, crabs, fish tissue, and fish livers from Morgans Point and Eagle Point	87
5.16	Lead concentrations (ppm) i oysters, crabs, fish tissue, and fish livers from Hanna Reef and Carancahua Reef	88
5.17	Selenium concentrations (ppm) i oysters, crabs, fish tissue, and fish livers from Morgans Point and Eagle Point	89
5.18	Selenium concentrations (ppm) i oysters, crabs, fish tissue, and fish livers from Morgans Point and Eagle Point	90
5.19	Selenium concentrations (ppm) i oysters, crabs, fish tissue, and fish livers from Hanna Reef and Carancahua Reef	91
5.20	Zinc concentrations (ppm) i oysters, crabs, fish tissue, and fish livers from Morgans Point and Eagle Point	92
6.1	Non-carcinogenic risk values for an average consumer of Galveston Bay seafood	112
6.2	Carcinogenic risk values for an average consumer of Galveston Bay seafood	113
6.3	Lifetime carcinogenic risk by site for and average (15 g/day) consumer of Galveston Bay seafood	114

FOREWORD

This final report, authored by Dr. James Brooks and colleagues at Texas A&M University, was commissioned by the Galveston Bay National Estuary Program (GBNEP) in early 1990. The purpose of the study was to acquire an initial characterization of the concentrations of toxic chemicals in fin- and shellfish from Galveston Bay and provide a preliminary estimate of the risks to human health posed by these chemicals. It became clear early in this study that the original objectives would require modification. For example, the limited spatial and temporal coverage in sampling and chemical analysis was imposed by funding constraints. Chemical analysis of finfish edible tissues and livers and shellfish edible tissues were conducted for numerous chemicals of concern including many toxic contaminants for which little or no human health effects data are available. The Spring floods of 1990 imposed real limits on the ability to collect samples representative of probable exposures to toxic contaminants. In addition, the sampling effort coincided with a major oil spill in the Bay. The resulting information was then combined with estimates of human seafood consumption rates to arrive at preliminary estimates of human health risks due to consumption of Galveston Bay seafood. An important caveat is that highly accurate data on seafood consumption (e.g., subsistence vs. market basket consumption and methods of seafood preparation) are not available and such information can dramatically affect risk estimates. The above factors currently limit the ability of the GBNEP to reduce many important uncertainties associated with the risk assessment of seafood contaminants. However, recognizing the limitations, we believe that this report provides much useful information to guide future risk assessments.

Dr. Brooks and his colleagues have performed all the required technical aspects of the project and constructively responded to peer review comments. Interpretation of human health risks associated with consumption of seafood that contains toxic contaminants is a complex issue. We believe that scientists play a critical role in performing the technical aspects of the risk assessment; however, they share with the citizens and their elected and appointed officials the responsibility for determining risk management policies, strategies, and plans (i.e., how the technical information with its uncertainties is used to regulate seafood consumption). Determining what is unacceptable risk is inherently a public decision-making process.

GBNEP wishes to remind the readers that, as citizens, they are an important voice in policy-setting, particularly through such vehicles as the National Estuary Program. To this end, it is appropriate for individual citizens to express their opinions regarding policies which may be affected by the

interpretation of data such as these. Mechanisms exist within the GBNEP, as well as through direct communications with government agencies and elected officials, for the concerns of citizens to be made known regarding specific policy issues.

Specifically with regards to this report, GBNEP wishes to notify the readers of the numerous uncertainties inherent in the estimates of human health risks. These uncertainties complicate the interpretation of the data, so we urge caution on the part of all readers to avoid "jumping to conclusions."

In summary, the reader is advised that no interpretation is offered in the document by either the authors or GBNEP regarding the significance of the risk estimates, and that there is much uncertainty in the estimates.

**Adopted by the Management Committee
July 15, 1992**